Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
AVIATION DATA SYSTEMS (AUST) PTY LTD.	)	WT Docket No. 08-9
	)	
Request for Waiver of Part 87 Rules to Allow Certification of System to Test Aircraft Data Link Systems	)	

ORDER

Adopted: June 8, 2009 **Released: June 9, 2009**

By the Deputy Chief, Mobility Division, Wireless Telecommunications Bureau:

I. INTRODUCTION

1. On October 15, 2007, Aviation Data Systems (Aust) Pty Ltd. ("ADS") filed a request for waiver of Section 87.131 of the Commission's Rules[1] to permit equipment certification and use of its MPRT-500, a new system to test aircraft data link systems.[2] For reasons set forth below, we grant ADS's request subject to certain conditions.

II. BACKGROUND

2. The MPRT-500 is a device designed to test aircraft data link systems on the tarmac close to the aircraft, and that will transmit and decode responses back from the aircraft. It is designed to support two protocols, Aircraft Communication Addressing and Reporting System ("ACARS") and Very High Frequency Digital Link ("VDL2").[3] VDL2 uses G1D emission,[4] but Section 87.131 does not authorize G1D

[1] 47 C.F.R. § 87.131 (listing authorized emission and maximum power in the Aviation Services).

[2] Request for Waiver (filed October 15, 2007) ("Request").

[3] Aircraft data link systems like ACARS and VDL2 transmit data automatically between ground personnel and aircraft, including reports on departure and destination, location and time, engine monitoring, aircraft flight position, maintenance discrepancy reports, and winds aloft observations from suitably equipped aircraft. *See* Amendment of Parts 2 and 87 of the Commission's Rules to permit the Aviation Services to use frequencies in the 136-137 MHz band, *Notice of Proposed Rule Making*, GEN Docket No. 89-295, 4 FCC Rcd 5224, 5224 n.7 (1989).

[4] *See* Amendment of Parts 2 and 87 of the Commission's Rules to Accommodate Advanced Digital Communications in the 117.975-137 MHz Band and to Implement Flight Information Services in the 136-137 MHz Band, *Report and Order*, WT Docket No. 00-77, 16 FCC Rcd 8226, 8232 ¶ 14 (2001). Emissions are designated by an alphanumeric code that indicates the type of modulation of the main carrier, nature of the signal(s) modulating the main carrier, and the type of information to be transmitted. *See* 47 C.F.R. § 2.201(b). G1D is a type of phase modulated digital emission. *See* 47 C.F.R. § 2.201(e).

emission for radionavigation land test ("RLT") equipment.[5]

3. On September 15, 2005, ADS filed a similar request for waiver to permit certification of the MPRT-500. On January 30, 2007, the Wireless Telecommunications Bureau's Mobility Division ("Division") denied the request.[6] The Division concluded that the request should be denied in light of the concerns of commenters Boeing Company and Aviation Spectrum Resources, Inc. ("ASRI") that ADS's proposed power levels could cause harmful interference to important aviation safety communications in the 118-137 MHz band.[7] In dicta, the Division agreed with ADS that the MPRT-500 most closely resembled a Maintenance Test Facility ("MTF") of a RLT station, and that requiring individual licensing of the device would impose an unnecessary cost and administrative burden on users.[8]

4. In the instant request, ADS modified its initial waiver request to propose operation of the MPRT-500 only in the 129.125-136.975 MHz portion of the band.[9] Moreover, only the 136.900-136.975 MHz portion of the band would be used for VDL2 with emission designator 14K0G1D, and the proposed output power has been reduced from fifty milliwatts to one milliwatt.[10] ADS also has incorporated features to ensure that the MPRT-500 will neither interrogate nor respond to any aircraft other than the one that is under test.[11]

5. On January 15, 2008, the Division sought comment on the request for waiver.[12] Comments were filed by Boeing Integrated Defense System ("Boeing IDS") and ASRI. ADS filed reply comments.

III. DISCUSSION

6. Section 1.925 of the Commission's Rules provides that we may grant a waiver if it is shown that (a) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and grant of the requested waiver would be in the public interest; or (b) in light of unique or unusual circumstances, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.[13] We conclude that grant of the instant waiver requested is warranted, subject to certain conditions. Specifically, we conclude that the underlying purpose of the subject rules would not be served by application to the instant case and grant of the requested waiver, to the extent described herein, would be

[5] *See* 47 C.F.R. § 87.131 (providing, in pertinent part, for the following authorized emission/maximum power for RLT stations: for 108.150 MHz, A9W/1 milliwatt; for 334.550 MHz, A1N/1 milliwatt; and for other VHF and UHF frequencies, M1A, XXA, A1A, A1N, A2A, A2D, A9W/1 watt).

[6] *See* Aviation Data Systems (Aust) Pty Ltd., *Order*, 22 FCC Rcd 1603 (WTB MD 2007) ("*Order"*).

[7] *Id.* at 1604-06 ¶¶ 6-10.

[8] *Id.* at 1603-04 ¶ 3, 1604-06 ¶¶ 7-10.

[9] *See* Request at 1, 5.

[10] *Id.* at 1, 3, 5.

[11] *Id.* at 4.

[12] Wireless Telecommunications Bureau Seeks Comment on Request for Waiver by Aviation Data Systems of Part 87 Rules to Allow Certification of a System to Test Aircraft Data Link Systems, *Public Notice*, 23 FCC Rcd 356 (WTB MD 2008).

[13] 47 C.F.R. § 1.925(b)(3). *See also WAIT Radio v FCC*, 418 F. 2d 1153, 1159 (D.C. Cir. 1969).

in the public interest.

7. Boeing IDS supports ADS's request. It notes that the MPRT-500 would be of particular use at sites, such as remote military installations, where there is no VDL2 ground station coverage, and thus no way to test the data link prior to departure.[14] It also believes that it would be beneficial to test data link equipment without transmitting signals over a live network, in order to avoid interrupting or delaying critical network communications.[15]

8. ASRI, which is the industry licensee for the air transport industry's aeronautical enroute and fixed services, also recognizes that there are situations in which deployment of the MPRT-500 would be beneficial, but ASRI continues to have concerns with the MPRT-500's potential to cause interference to important aviation safety communications.[16] Therefore, while ASRI applauds the modifications that ADS has made since its prior waiver request, it believes that additional conditions should be imposed upon a grant of the request. ADS opposes some of ASRI's proposed conditions.

9. First, ASRI asserts that the output power should be limited to one hundred microwatts.[17] Given that the MPRT-500 will operate close to the aircraft that is being tested, ASRI believes that one milliwatt is more power than is required.[18] It argues that while one milliwatt is appropriate for RLT stations,[19] which generally operate on "test frequencies" set aside for such use,[20] the MPRT-500 should be distinguished because it is intended to operate on frequencies used by enroute stations that are part of active networks.[21] ADS responds that one milliwatt is necessary to compete with electrical noise levels around the airport and to meet bit error rate performance levels.[22] Further, ADS states that the device will actually reduce congestion by obviating the need under current testing procedures for the ground station to transmit at twenty-five watts.[23] On May 14, 2009, however, ADS agreed to conditioning a

[14] Boeing IDS Comments at 1.

[15] *Id.*

[16] ASRI Comments at 1-2.

[17] *See* ASRI Comments at 4.

[18] *Id.* at 5. ASRI states that the free range line-of-sight range for a one milliwatt signal is in excess of ten thousand feet, while the necessary range for the MPRT-500 typically would be less than one hundred feet. *Id.*

[19] *See* 47 C.F.R. § 87.131.

[20] *See* 47 C.F.R. § 87.173.

[21] ASRI Comments at 5 n.11. We agree with ASRI that, because the MPRT-500 is not a RLT station (because it tests communications transceivers rather than radionavigation equipment), ADS requires not only a waiver of Section 87.131, but also of the definitions of radionavigation land test station and radionavigation service in Section 87.5 of the Commission's Rules and the frequency designations in Section 87.173 of the Commission's Rules, 47 C.F.R. §§ 87.5, 87.173. *See* ASRI Comments at 2-3. ADS argues that the Division already determined that the device should be considered a MTF of a RLT station. *See* Reply at 6. In fact, however, the Division concluded only that a RLT MTF was the closest analogue in the Commission's rules, and provided the appropriate framework for the waiver request; the Division did not hold that the MPRT-500 is a RLT MTF.

[22] Reply at 6.

[23] *Id.* at 6-7.

waiver on the MPRT-500's output power being limited to one hundred microwatts.[24] We remain concerned for the potential interference to aviation safety and navigation communications, and are not persuaded that one milliwatt of output power is necessary. We note that ADS states the devices will be used "on the tarmac close to an aircraft."[25] We therefore agree that a limit of one hundred microwatts should provide the necessary range for the device.

10. Next, ASRI argues that use of the MPRT-500 should be permitted only pursuant to an individual station license,[26] and that applications for such licenses be coordinated with the Federal Aviation Administration ("FAA") and ASRI because the band in which the device would operate includes both FAA and ASRI enroute frequencies.[27] ADS relies on the Division's prior conclusion that requiring a license for each device would be an unnecessary cost and an administrative burden, and argues that the same is true of individual coordination with FAA and ASRI.[28] ADS contends that licensing and coordination are unnecessary because of the strict interference controls incorporated into the device.[29] As noted above, we remain concerned for the potential interference to aviation safety and navigation communications, because the requested frequencies include important air traffic control and aeronautical enroute frequencies that must be protected. We therefore agree with ASRI that measures are needed to ensure proper operation of the device and to assure quick and efficient resolution of interference issues. Consequently, we conclude that we should permit use of the MPRT-500 only pursuant to a station license. Moreover, the applicant will be required to notify the appropriate Regional Office of the FAA prior to filing an application for a new or modified station license, and when filed the application must identify the FAA Regional Office notified and the date of notification. We do not believe that these requirements, which already apply to RLT MTF operations,[30] will unduly burden prospective MPRT-500 users.[31]

11. ASRI also contends that grant of the waiver request should be expressly conditioned on the device incorporating the features enumerated in the request to ensure that the MPRT-500 communicates only with the intended associated aircraft station.[32] ADS agrees[33] to comply with all applicable emission requirements in the International Civil Aviation Organization ("ICAO") Manual on

[24] *See* Letter dated May 14, 2009 from Bruce A. Olcott, counsel for ADS, to Marlene H. Dortch, Secretary, Federal Communications Commission.

[25] Request at 2.

[26] *Id.* at 4. ASRI also suggests that ADS be required to inform purchasers of the licensing requirement. *Id.*

[27] *Id.* at 4-5.

[28] Reply at 7-8 (citing *Order*, 22 FCC Rcd at 1606 ¶ 10). ADS argues that requiring coordination before each use would be particularly burdensome because the MPRT-500 is a portable device. *Id.* at 8.

[29] *Id.* at 7-8.

[30] *See* 47 C.F.R. § 87.475(a).

[31] With respect to ADS's concern that the portability of the device will render licensing and coordination burdensome, we note that the authorized operating area may be defined as an entire air field or airport. *See*, *e.g.*, licenses for Stations WRLT4922 and WRLT2064.

[32] *See* ASRI Comments at 6.

[33] *See* Reply at 3.

VHF Digital Link (VDL) Mode 2 ("Doc 9776")[34] and the ACARS specifications set forth in RTCA DO-281A ("DO-281A").[35] It points out, however, that it cannot comply with requirements therein that simply are not applicable to a stand-alone device, such as interoperability and connection handoff requirements.[36] We agree that ADS need not comply with requirements that do not apply to a stand-alone device, but we find that it must comply with all applicable requirements (not only emission requirements) of Doc 9776 and DO-281A. We also agree with ADS that the waiver should be conditioned not (as suggested by ASRI) on the MPRT-500 communicating only with the intended associated aircraft station, but rather on the device engaging in data link exchange only with the intended associated aircraft station.[37]

IV. CONCLUSION

12. In light of the record in this proceeding and our analysis thereof, we believe that a waiver would further the purpose of the Commission's aviation ramp test equipment rules. Given that the purpose of ADS's device is to test aircraft data link systems on the tarmac close to the aircraft being tested and to transmit and decode responses back from the aircraft, we conclude that a grant of the request for waiver would not frustrate the underlying purpose of the rules for RLT stations. Thus, we conclude that a waiver to permit certification of the MPRT-500 should be granted, subject to the following conditions:

1) The output power shall not exceed 100 microwatts.

2) Non-Federal Government use shall require a station license. The applicant will be required to notify the appropriate Regional Office of the FAA prior to filing an application for a new or modified station license, and the application will be required to identify the FAA Regional Office notified and the date of notification.

3) The device shall comply with the applicable specifications for VDL Mode 2 operation set forth in the ICAO Manual on VHF Digital Link (VDL) Mode 2 and the ACARS specifications set forth in RTCA DO-281A.

4) The device shall be designed so that it will engage in data link exchange only with the aircraft whose identification has been programmed into the device.

5) The operation of the device is to be strictly secondary to that of other licensed stations. The device shall not cause harmful interference and must accept harmful interference from other stations.

V. ORDERING CLAUSES

13. Accordingly, IT IS ORDERED, pursuant to Sections 4(i) and 303(i) of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 303(i), and Section 1.925 of the

[34] *See* Manual on VHF Digital Link (VDL) Mode 2 ("Doc 9776").

[35] *See* DO-281A, Minimum Operational Performance Standards for Aircraft VDL Mode 2 Physical, Link and Network Layer**,** November 8, 2005.

[36] *See* Reply at 3.

[37] *Id.* at 4-5. That is, the signal emitted by the MPRT-500 to inform aircraft of the device's presence might be received by other nearby aircraft, but the MPRT-500 will not query or respond to aircraft other than the one under test.

Commission's Rules, 47 C.F.R. § 1.925, that the Request for Waiver of Section 87.131 of the Commission's Rules, 47 C.F.R. § 87.131, filed by Aviation Data Systems (Aust) Pty Ltd. on September 15, 2005, IS GRANTED subject to the conditions stated herein.

14. This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission's Rules, 47 C.F.R. §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

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